

# Instruction manual

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## HVLP Gravity Feed Paint Spray Gun



**MODEL PSH1**

### IMPORTANT

*Please make certain that the person who is to use this equipment carefully reads and understands these instructions before starting operations.*

**PORTER-CABLE**  
PROFESSIONAL POWER TOOLS

## SAFETY GUIDELINES - DEFINITIONS

This manual contains information that is important for you to know and understand. This information relates to protecting **YOUR SAFETY** and **PREVENTING EQUIPMENT PROBLEMS**. To help you recognize this information, we use the symbols below. Please read the manual and pay attention to these sections.

<b>SAFETY and PREVENTING EQUIPMENT PROBLEMS.</b> To help you recognize this information, we use the symbols below. Please read the manual and pay attention to these sections.	
<b>▲DANGER</b>	Indicates an imminently hazardous situation which, if not avoided, will result in <b>death or serious injury</b> .
<b>▲WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, <b>could</b> result in <b>death or serious injury</b> .
<b>▲CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, <b>may</b> result in <b>minor or moderate injury</b> .
<b>CAUTION</b>	Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, <b>may</b> result in <b>property damage</b> .

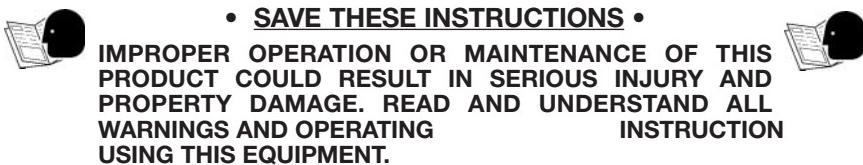
## IMPORTANT SAFETY INSTRUCTIONS

### READ AND FOLLOW ALL INSTRUCTIONS.

This tool was designed for certain applications. Porter-Cable strongly recommends that this tool NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the tool until you have written Porter-Cable and we have advised you.

Technical Service Manager  
Porter-Cable Corporation  
4825 Highway 45 North  
P.O. Box 2468  
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### • SAVE THESE INSTRUCTIONS •



### ▲WARNING

**The Following Hazards Can Occur During The Normal Use Of This Product:**

HAZARD	WHAT CAN HAPPEN	HOW TO PREVENT IT
<b>RISK OF EXPLOSION OR FIRE - FLAMMABLE MATERIALS</b>  	When paints or materials are sprayed, they are broken into very small particles and mixed with air. This will cause certain paints and materials to become extremely flammable and could result in serious injury or death.	Never spray near open flames or pilot lights in stoves or heaters.  Never smoke while spraying.  Provide ample ventilation when spraying indoors.

HAZARD	WHAT CAN HAPPEN	HOW TO PREVENT IT
<b>RISK OF EXPLOSION - INCOMPATIBLE MATERIALS</b> 	The solvents 1,1,1-Trichloroethane and Methylene Chloride can chemically react with the aluminum used in most spray equipment, and this gun and cup, to produce an explosion hazard and could result in serious injury or death.	Read the label or data sheet for the material you intend to spray.  1. Never use any type of spray coating material containing these solvents. 2. Never use these solvents for equipment cleaning or flushing. 3. If in doubt as to whether a material is compatible, contact your material supplier.
<b>RISK TO BREATHING</b> 	Some paints, coatings and solvents may cause lung damage, and burns if inhaled or allowed to come into contact with skin or eyes.	Use a NIOSH approved mask or respirator and protective clothing designed for use with your specific application and spray materials. Some masks provide only limited protection against toxic materials and harmful paint solvent. Consult with a Safety Expert or Industrial Hygienist if uncertain about your equipment or materials.
<b>RISK FROM FLYING OBJECTS</b> 	Certain parts are under pressure whenever the gun is connected to a pressurized air line. These parts may be propelled if the gun is disassembled.  Compressed air may propel dirt, metal shavings, etc. and possibly cause an injury.  Prolonged exposure to air spray can result in permanent damage to hearing.	Disconnect the gun from the air line, or completely depressurize the air line whenever the gun is to be disassembled.  Never point any nozzle or sprayer toward a person or part of the body. Always wear ANSI Z27.1 safety approved goggles or glasses when spraying. Always wear hearing protection when operating spray equipment.
<b>RISK OF INJECTION</b> 	Spray guns operate at pressures and velocities high enough to penetrate human and animal flesh, which could result in amputation or other serious injury.  ! See a physician immediately!	Never place hands in front of nozzle.  Direct spray away from self and others.

## SPECIFICATIONS

Air Inlet 1/4 NPS

Maximum Air Pressure 100 psi.

Recommended Operating Air Pressure 45 psi.

Cup 600 cc (20.29 oz)

## GENERAL INFORMATION

**CAUTION** Before disassembly or removal of any part of gun or attached components, shut off compressor, release pressure by depressing trigger, and disconnect power source. NEVER assume system pressure is zero!

**WARNING** TO AVOID CREATING AN EXPLOSIVE ATMOSPHERE, WORK ONLY IN WELL-VENTILATED AREAS.  
**WARNING** USE OF A FACE MASK IS RECOMMENDED TO PREVENT INHALATION OF TOXIC MATERIAL.

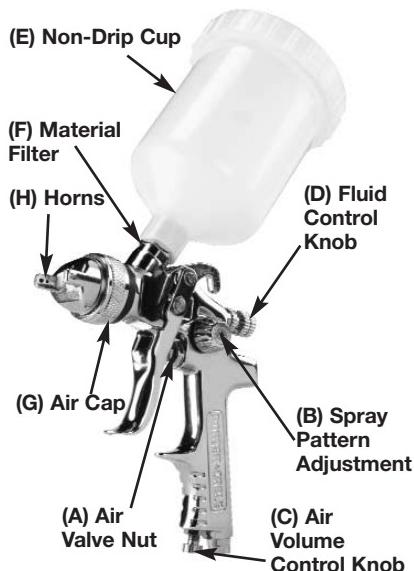
## OPERATION

**WARNING** DO NOT ATTEMPT TO UNCLOG (BACK FLUSH) SPRAY GUN BY SQUEEZING TRIGGER WHILE HOLDING FINGER IN FRONT OF FLUID NOZZLE.

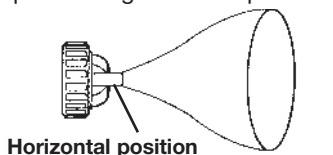
**CAUTION** Pressure may vary according to viscosity of material used. Maximum working pressure of gun is 100 psi. DO NOT EXCEED PRESSURE LIMIT OF GUN OR ANY OTHER COMPONENT IN SYSTEM!

**CAUTION** Prior to daily operation, make certain that all connections and fittings are secure. Check hose and all connections for a weak or worn condition that could render system unsafe. All replacement components such as hose or fittings must have a working pressure equal to or greater than system pressure.

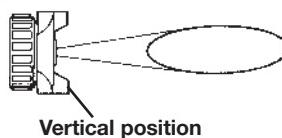
Prior to shipment, this gun was treated with an anticorrosive agent. Before using this gun make sure that it is carefully flushed with thinner.



1. The position of the air cap (**H**) horns will determine the spray pattern. Loosen (**G**) air cap and rotate horns to achieve desired pattern. Tighten air cap.



Horizontal position



Vertical position

2. Attach material cup to the gun.  
**NOTE:** The **(F)** material filter supplied is optional to protect against contaminants and small particles. See parts list for material filter orientation.
3. Attach air supply line to 1/4 NPS air inlet.

**▲CAUTION** **NEVER point spray gun at self or any other person. Accidental discharge of material may result in serious injury.**

4. Adjust air pressure at air compressor.

**▲CAUTION** **DO NOT exceed 100 psi.**

5. Depress spray gun trigger fully to spray material. **NOTE:** Depressing trigger partially will cause only air to be released.

#### **Adjust spray gun:**

- a. Amount of material released (density of "fan spray") is controlled by **(D) fluid control knob.** Turn knob counterclockwise to increase, or clockwise to decrease, the fluid flow.
- b. Width of "fan spray" is governed by **(B) pattern adjustment knob.** Turn knob counterclockwise to increase, or clockwise to decrease, air flow.
- c. Air quantity is controlled by **(C) air-volume control knob.** Turn knob counterclockwise to increase, or clockwise to decrease, the air flow.

**NOTE:** Care should be exercised when handling spray gun to avoid damage to the orifice of the air cap and tip of fluid nozzle. Damage to these parts results in irregular spray patterns.

## MAINTENANCE

**▲CAUTION** Always exercise extreme care when using any solvent or thinner. Never clean gun near fire, flame, or any source of heat or sparks. Properly dispose of used cleaning materials.

**▲CAUTION** DO NOT soak entire spray gun in solvent or thinner for a long period of time as this will destroy lubricants and possibly make motion uneven. NEVER use lye or caustic alkaline solution for cleaning. Such solutions will attack aluminum alloy parts of gun.

It is important that spray gun be cleaned after daily use. Cleaning is accomplished by spraying appropriate solvent or thinner through system. Wipe exterior of spray gun with solvent soaked cloth or use cleaning brush(s) provided to remove any accumulated material.

### Cleaning

- (a) Empty material from gravity feed cup and replace with a suitable solvent.
- (b) Operate trigger until all material traces have disappeared and gun is thoroughly clean.
- (c) Clean air cap with brush.

**IMPORTANT:** Make certain air cap and fluid nozzle are kept clean at all times. If necessary, remove these two components and soak them in solvent. DO NOT use hard objects to clean clogged holes. The smallest amount of damage may cause irregular spray pattern.

**NOTE:** If fluid nozzle is to be removed for thorough cleaning, squeeze trigger to prevent damage of fluid needle tip when unscrewing nozzle.

### Lubrication

Lubrication procedures must be observed after thoroughly cleaning the gun to ensure effective, high quality performance of spray gun.

1. Lubricate working points with straight mineral oil, or castor oil.
2. Periodically, place a few drops of oil on tapered sections of fluid nozzle to ensure easy operation of air cap. When spraying water base materials, coat fluid nozzle inside and outside with straight mineral oil after each use.
3. Outer diameter of needle sleeve of fluid needle assembly must be lubricated occasionally with straight mineral oil.

### Exchange of nozzle set

When changing nozzle set, make sure the complete nozzle set is exchanged. A set consist of air cap, paint nozzle and fluid needle. **NOTE:** Assemble fluid nozzle before putting in fluid needle.

### Exchange of the self-tensioning needle packing

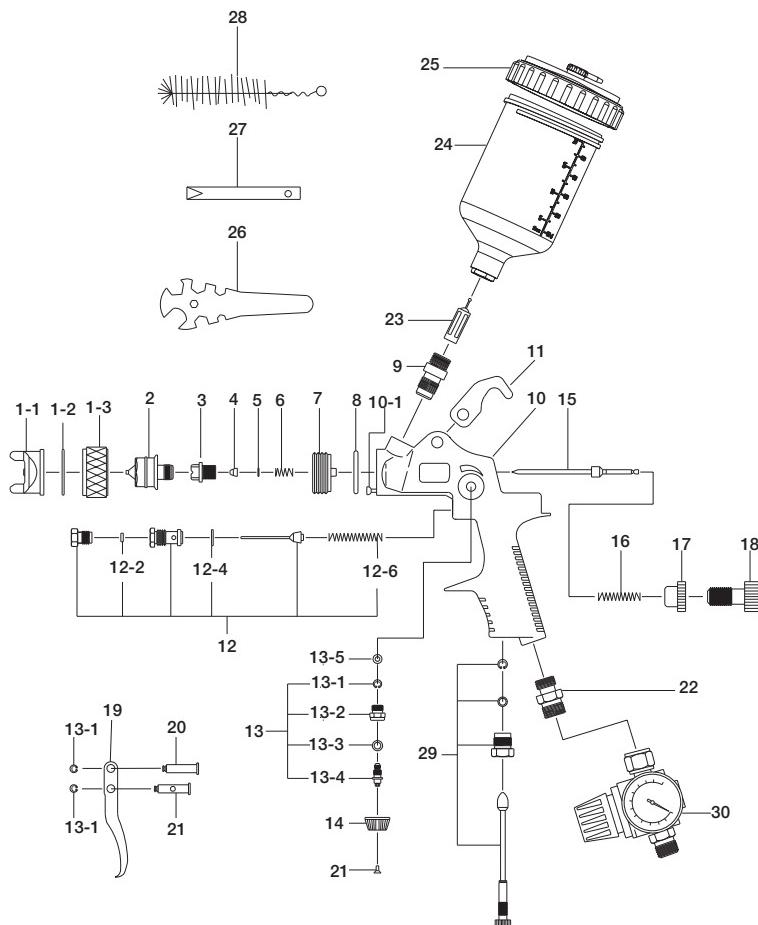
The **fluid needle seal** is effected by a Teflon packing with self-tensioning compression spring. To change the packing during general overhaul, please use the **socket spanner** provided.

## TROUBLESHOOTING

**NOTICE:** See parts list to identify parts referred to in these Troubleshooting steps.

Defective Pattern	Likely Cause	Suggested Remedy
A. 	Dried material is clogging side-port "A" and causing side-port "B" to blow spray towards the clogged side 	Soak side-ports in thinner to clean clog. <b>DO NOT</b> poke any opening with hard objects.
B. 	Dried material at fluid nozzle "C" restricts air flow Loose air nozzle Air pressure set too high 	Remove air nozzle. Wipe off fluid tip using a cloth soaked in thinner or by soft brush Fasten nozzle securely Reduce air pressure
C. Spitting, irregular or fluttering spray 	Fluid nozzle cracked or worn Leak at thread of fluid nozzle Leak at fluid needle  Needle packing worn out Insufficient fluid in cup Vent hole in container cover clogged	Tighten or replace Tighten fluid nozzle Tighten compression nut assembly or replace needle packing Replace packing Fill cup with fluid Clean Out
D. Split spray pattern 	Air pressure too high	Turn pattern control knob clockwise to decrease fan width. Turn fluid needle adjusting nut counterclockwise to increase fluid flow
E. Unatomized or spattered spray	Material too heavy Insufficient air pressure Fluid pressure too high Dried material on tip of fluid nozzle or air jets of air cap	Thin material or use larger orifice fluid nozzle set Increase pressure to within limit Reduce pressure Clean
F. Inadequate air delivery	Air needle partially closed Dried material in air jets or air cap Obstruction in air line	Open control knob Clean
G. Excessive fog	Air pressure too high for viscosity of fluid	Remove obstruction Reduce air pressure and/or open fluid control knob
H. Material leaking from fluid inlet of cup.	Loose cup or foreign substances on/between cup thread and fluid inlet	Tighten and clean or replace it
I. Material leaking from nozzle when trigger is released	Worn fluid needle Dried material in tip of nozzle Loose packing nut	Replace Clean Tighten needle packing nut by turning counterclockwise

## PARTS LIST



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REF NO	DESCRIPTION	PART NO
1	Air Nozzle with Cap	GT9601
1-1	Air Nozzle	GT9601-1
1-2	Washer	GT1701-2
1-3	Cap	GT1701-3
2	Fluid Nozzle	GT9804
3	Packing Screw for Paint Needle	GT1705
4	Teflon Seal	GT1706
5	Washer	GT1707
6	Spring	GT1708
7	Brass Ring	GT1709
8	Gasket	GT1710
9	Connector for 0.6 Liter cup	GT1711
10	Gun Body	GT9612
10-1	Screw	GT9612-1
11	Hanger	GT9612N-0
12	Air Valve Assembly	GT1713
12-2	Teflon Ring	GT1713-2
12-4	O-Ring	GT1713-4
12-6	Spring	GT1713-6
13	Spray Regulating Nut Assembly	GT1714
13-1	E-Ring	GT1714-1
13-2	Spray Regulating Nut	GT1714-2
13-3	O-Ring	GT1714-3
13-4	Spray Regulating Screw	GT1714-4
13-5	Gasket	GT1714-5
14	Control Knob	GT9615
15	Paint Needle Complete	GT9616
16	Spring for Paint Needle	GT9617
17	Lock to Fluid Control Knob	GT9618
18	Fluid Control Knob	GT9619
19	Trigger	GT1722
20	Trigger Pin	GT1724
21	Trigger Pin	GT1725
22	Air Connector	GT9626
23	Material Filter	GT1727
24	Cup	GT1741
25	Cover	GT1729-4
26	Spanner Wrench	GT1730
27	Socket Spanner	GT1731
28	Brush	GT1732
29	Air Adjusting Valve Assembly	GT1733
30	Regulator	GT9640

### FLUID NOZZLES \*

Part Number	Orifice Diameter
GTFR-906-1.3	1.3 mm (.051")
GTFR-906-1.4	1.4 mm (.055")
GTFR-906-1.5	1.5 mm (.059")
GTFR-906-1.7	1.7 mm (.067")
GTFR-906-1.9	1.9 mm (.075")
GTFR-906-2.0	2.0 mm (.079")
GTFR-906-2.2	2.2 mm (.087")

\* Standard size is supplied with gun.  
Other nozzle sets should be ordered separately. A set includes an air cap, fluid nozzle, and fluid needle.

## LIMITED WARRANTY

**PORTER-CABLE CORPORATION** warrants to the original purchaser that each new pneumatic spray gun is free from defects in material and workmanship, and agrees to replace under this warranty any defective pneumatic spray gun as follows from the original date of purchase.

**2 YEARS** – Limited warranty on **Porter-Cable** pneumatic spray guns.

**90 Days** - Repair parts.

### THIS WARRANTY IS NOT TRANSFERABLE AND DOES NOT COVER

- Products sold damaged or incomplete, sold "as is," sold reconditioned, or used as rental equipment.
- Damage or liability caused by shipping, improper handling, improper maintenance, improper modification, or the use of accessories and/or attachments not specifically recommended by **Porter-Cable** for the product.
- Defects caused by operator abuse or negligence, or the failure to install, operate, maintain, and store the product according to the instructions in the owner's manual.
- Damage caused by cold, heat, rain, excessive humidity, corrosive environments and materials, or other contaminants.
- Cosmetic defects that do not interfere with product functionality.
- Freight costs from customer to Porter-Cable.
- Repair and transportation costs of products or parts determined not to be defective.
- **ANY INCIDENTAL, INDIRECT OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCT.** Some states do not allow the exclusion limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- **IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO TWO YEARS FROM THE DATE OF ORIGINAL PURCHASE.** Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

**WARRANTY SERVICE** is available by delivering or shipping the defective product or part to any Porter-Cable authorized warranty service location. To determine the nearest authorized warranty service location, call the toll free number, 1-888-559-2468, 24 hours a day, 7 days a week. Specific instructions regarding servicing arrangements and scheduling may vary depending on availability of repair parts.

- DO NOT return the defective product to the retailer.
- Retain the original cash register receipt as proof of purchase for warranty work.
- Purchasers should contact Porter-Cable directly if they do not receive satisfactory results from the authorized warranty service center.

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*Porter-Cable Corporation*

Jackson, TN

1-888-559-8550